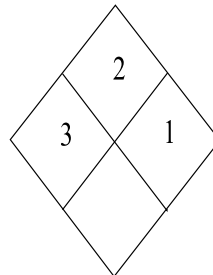


MATERIAL SAFETY DATA SHEET

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: MOCAP® EC NEMATICIDE - INSECTICIDE
GENERAL USE: Emulsifiable concentrate for agricultural applications
PRODUCT DESCRIPTION: Amber-brown oily liquid with a skunk-like (mercaptan) odor
EPA REGISTRATION NUMBER: 5481-9041
MSDS NUMBER: 424_1D1
CURRENT MSDS REVISION DATE: 4 August, 2011



MANUFACTURER:
AMVAC CHEMICAL CORPORATION
4100 E. Washington Blvd.
Los Angeles, CA 90023-4406
PHONE: 323-264-3910
FAX: 323-268-1028

EMERGENCY TELEPHONE NUMBERS:
MANUFACTURER: 323-264-3910
TRANSPORTATION (24 HOURS)
CHEMTREC: 800-424-9300
OTHER (24 HOURS)
AMVAC: 323-264-3910

2. COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	WT %	CAS No.
Ethoprofos; also known as Ethoprop,	69.6%	13194-48-4
Other components:	30.4%	
Includes Naphthalene	<2.8%	91-20-3

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)

COMPONENT	HAZARD	OSHA	ACGIH
Ethoprop	Toxic	None	None
Naphthalene		10 ppm (PEL) 15 ppm (STEL)	10 ppm (TWA) 15 ppm (STEL)

3. **HAZARDS IDENTIFICATION**

EMERGENCY OVERVIEW:

DANGER! POISON! Poisonous if swallowed, inhaled or absorbed through skin. Rapidly absorbed through the skin. Strong skin sensitizing potential. Inhalation or skin contact may, without symptoms, progressively increase susceptibility to Ethoprop (organophosphate) poisoning. Do not swallow or get in eyes, on skin or on clothing. Do not breathe vapors.

KEEP OUT OF REACH OF CHILDREN!

Toxic to fish and wildlife. Do not contaminate bodies of water.

POTENTIAL HEALTH EFFECTS

ROUTE(S) OF ENTRY: Poisonous if swallowed, inhaled or absorbed through skin. Rapidly absorbed through skin. Inhalation or skin contact may, without symptoms, progressively increase susceptibility to poisoning.

SIGNS OF ACUTE OVEREXPOSURE: Symptoms include weakness, headache, tightness in chest, blurred vision, non-reactive pinpoint pupils, salivation, sweating, nausea, vomiting, diarrhea, and abdominal cramps. In extreme cases unconsciousness, convulsions, severe respiratory depression and death may occur.

SIGNS OF CHRONIC OVEREXPOSURE: Repeated exposures to small doses of this Ethoprop insecticide and other organophosphates may lower the cholinesterase to levels where the above symptoms of acute overexposure are observed. The symptoms for chronic overexposure to this Bifenthrin Insecticide/Miticide are the same as for acute overexposure

CARCINOGENICITY: ETHOPROP is classified as a “likely” human carcinogen by EPA due to the occurrence of malignant adrenal pheochromocytomas in male rats. Naphthalene has been classified as carcinogenic by both ACGIH (Group A4) and NTP.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Preexisting skin or respiratory disorders may be aggravated by exposure to components of this product. Preexisting conditions which lower cholinesterase levels increase vulnerability to cholinesterase depression. These include: (for plasma) chronic alcoholism; malnutrition; dermatomyositis; existing toxicity from exposure to carbon disulfide; benzalkonium salts, organic mercury compounds, ciguatoxins or solanines; and (for RBC) hemolytic anemia.

4. FIRST AID MEASURES

ETHOPROP IS A SEVERE CHOLINESTERASE INHIBITOR. A PHYSICIAN SHOULD BE CONTACTED IN ALL CASES OF EXPOSURE TO ETHOPROP AND ITS FORMULATIONS. WEAR PROTECTIVE EQUIPMENT WHEN TREATING SOMEONE EXPOSED TO ETHOPROP TO PREVENT EXPOSURE OF THE RESCUER.

EYES: Immediately flush the eyes with copious amounts of clear, cool running water for a minimum of 15 minutes. Hold the eyelids apart during the flushing to ensure rinsing of the entire surface of the eyes and lids with water. Contact a physician immediately. If there will be a delay in getting medical attention, rinse the eyes for at least another 15 minutes.

INHALATION: Remove victim to fresh air. If breathing has ceased, clear the victim's airway and start mouth-to-mouth artificial respiration. If breathing is difficult, give oxygen. Contact a physician immediately. Be sure the contact areas are clean to prevent contamination of the rescuer.

INGESTION: DO NOT induce vomiting. If subject is conscious, administer an 8 oz. glass of water containing 2 tbsp. activated charcoal. Never give anything by mouth to an unconscious person. Contact a physician immediately. Be sure the mouth is clean or wear rubber gloves to prevent contamination of the rescuer.

SKIN: Immediately flush all affected areas with large amounts of clear water for at least 15 minutes. Remove contaminated clothing. Do not attempt to neutralize with chemical agents. Wash clothing before reuse. If skin irritation develops, contact a physician immediately.

NOTE TO PHYSICIANS: Do not wait for laboratory confirmation to treat patients with strong clinical evidence of organophosphate poisoning. In the USA and other countries, contact your local or national poison control center for more information.

Do Not handle the patient without the following protective equipment in place: chemical resistant gloves and apron (preferably nitrile). Remove contaminated clothing and do not reuse without thorough cleaning with detergent and hot water. Dispose of heavily contaminated clothing, including shoes, as a hazardous waste.

Establish airway and oxygenation. IV Atropine sulfate is the antidote of choice against parasympathetic nervous stimulation. If there are signs of parasympathetic stimulation, Atropine Sulfate should be injected at 10 minute intervals in doses of 1 to 2 milligrams until complete atropinization has occurred. Pralidoxime chloride (2-PAM chloride) may also be used as an effective antidote in addition to and while maintaining full atropinization. In adults, an initial dose of 1 gram of 2-PAM should be injected, preferably as an infusion, in 250 cc of saline over a 15 to 20 minute period. If this is not practical, 2-PAM may be administered slowly by intravenous injection as a 5% solution in water over not less than 2 minutes. After about an hour, a second dose of 1 gram of 2-PAM will be indicated if muscle weakness has not been relieved. For infants and children, the dose of 2-PAM is 0.25 grams. Avoid morphine, aminophylline, phenothiazines, reserpine, furosemide and ethacrynic acid. Clear chest by postural drainage. Oxygen administration may be necessary. Observe patient continuously for 48 hours. Repeated exposure to cholinesterase inhibitors may without warning cause prolonged susceptibility to very small doses of any cholinesterase inhibitor. Allow no further exposure until time for cholinesterase regeneration has been attained as determined by a blood test.

4. FIRST AID MEASURES, cont'd

Bathe and shampoo contaminated skin and hair. If ingested, empty stomach; activated charcoal is useful to further limit absorption. If victim is alert, Syrup of Ipecac (2 tablespoons in adults, 1 tablespoon in small children) followed by water (2 glasses for adults, 1 glass for children) is indicated. If symptoms such as loss of gag reflex, convulsions, or unconsciousness occur before emesis, gastric lavage should be considered following intubation with a cuffed endotracheal tube.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES

Flashpoint: 84°C/ 183°F (Tagliabue closed Cup)
Lower flammable limit: 0.6% (V)
Upper flammable limit: 7% (V)

EXPLOSIVITY

Mechanical Impact: Not likely to occur
Static Discharge: Due to the solvent, this product can accumulate static charges which can cause an incendiary electrical discharge. Even empty containers may contain sufficient residues to cause an explosion.

HAZARDOUS COMBUSTION PRODUCTS: This product may emit hazardous fumes of carbon oxides, sulfur oxides and unidentified organic compounds when it is heated excessively or burned. WEAR SELF-CONTAINED BREATHING APPARATUS.

EXTINGUISHING MEDIA: Water spray, dry chemical, foam, or carbon dioxide.

FIRE FIGHTING INSTRUCTIONS: Evacuate nonessential personnel from the area. Keep upwind. Wear self-contained breathing apparatus and impervious clothing, including gloves and eye protection. Clean all clothing before reuse. Severely contaminated clothing cannot be adequately decontaminated, and must be disposed as a hazardous waste. Shower with soap and water after contact with this product.

6. ACCIDENTAL RELEASE MEASURES

GENERAL: Use personal protective equipment as outlined in section 8. Keep bystanders upwind and away from the spill.

SMALL SPILL: Cover with nonflammable absorbent (clay, sand, oil dry, kitty litter, etc.) to absorb the liquid. Sweep into an open plastic drum. Decontaminate the area and equipment with dilute alkali or ammonia (less than 5% solution) and detergent. Flush the area with water. Absorb and sweep into the same open plastic drum. Close the drum and dispose of as a hazardous waste.

6. ACCIDENTAL RELEASE MEASURES, cont'd

LARGE SPILL: Dike the spill to prevent contamination of local water sources. Siphon the majority of the liquid into drums for use or disposal, depending on the circumstances. Clean the area as described for a small spill.

7. HANDLING AND STORAGE

HANDLING: Keep this product cool and dry. Keep container closed except when transferring material for use. When opening the container wear personal protective equipment (Section 8). Wash thoroughly after handling this product.

STORAGE: Store this product in original container. Store away from feed, food, and drink. Keep away from children and pets.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: A well-ventilated area with the use of local exhaust is recommended.

RESPIRATORY PROTECTION: A properly FIT-TESTED NIOSH/MSHA approved respirator fitted with organic vapor cartridges may be required when working with this product. Specific use regulations are listed on the label. For emergency and other conditions where the exposure limit may be greatly exceeded, use an approved positive-pressure, self-contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply..

SKIN PROTECTION: Wear long-sleeved uniform or coveralls and head covering, socks, closed toe boots or shoes, and rubber gloves. In case of larger exposures, such as in large spills, a full body cover barrier suit such as a rubber rain suit is recommended.

EYE PROTECTION: Safety glasses with sideshields or chemical protective goggles are required whenever someone is working with hazardous chemicals.

OTHER PROTECTION: An emergency eyewash fountain or bottle should be located nearby.

9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE:	Liquid
APPEARANCE:	Amber-brownish oily liquid
ODOR:	Skunk-like (mercaptan) odor
SPECIFIC GRAVITY:	1.03 g/cm ³ (@ 20 °C
DENSITY:	8.60 lb/gal

9. **PHYSICAL AND CHEMICAL PROPERTIES, cont'd**

BOILING POINT:	Decomposes @ 203 °C (a.i.)
SOLUBILITY (WATER):	Emulsifies
SOLUBILITY (OTHER):	Soluble in any common organic solvents, including mineral oils
pH (1% dispersion):	Not available

10. **STABILITY AND REACTIVITY**

CHEMICAL STABILITY (Conditions to avoid): This product is stable under normal storage conditions.

INCOMPATIBILITY: Strong oxidizing agents, bases, and extreme heat

HAZARDOUS DECOMPOSITION PRODUCTS: The actual decomposition products have not been identified. Burning this product will probably produce oxides of carbon, sulfur and phosphorus, as well as unidentified compounds.

HAZARDOUS POLYMERIZATION: Will not polymerize.

11. **TOXICOLOGICAL INFORMATION**

GENERAL: Information for the formulation and for the active ingredient, Ethoprop, is given below.

INGESTION:	Oral LD ₅₀ (rat):	15.9/46.7 mg/kg (female/male)
INHALATION:	Inhalation LC ₅₀ (rat):	0.32/0.86 mg/l (4 hr) (female/male)
DERMAL:	Skin LD ₅₀ (rat):	166/369 mg/kg (female/male)
IRRITATION:	Eye irritation:	No test data available
	Skin irritation:	No test data available
SENSITIZATION:	Skin sensitization: (guinea pig)	Probably a sensitizer

TERATOGENICITY: Testing of ETHOPROP Technical showed no evidence of teratogenicity in laboratory animals.

MUTAGENICITY: ETHOPROP is not considered to be mutagenic *in vivo*.

CARCINOGENICITY: ETHOPROP is classified as a "likely" human carcinogen by EPA due to the occurrence of malignant adrenal pheochromocytomas in male rats. Naphthalene has been classified as carcinogenic by both ACGIH (Group A4) and NTP.

REPRODUCTIVE TOXICITY: ETHOPROP has not shown any reproductive effects in laboratory animals.

TOXICOLOGICAL SYNERGISTIC PRODUCTS: No data are available.

12. ECOLOGICAL INFORMATION

GENERAL: This product is toxic to fish and wildlife, based on the information given below for the active ingredient, Ethoprop. Keep out of surface waters, sewers, and waterways entering or leading to surface waters. Notify authorities if any exposure to the general public or environment occurs or is likely to occur.

SPECIFIC RESULTS: The following information is for ETHOPROP.

Rainbow Trout, 96 hr LC ₅₀	2.1 mg/L
Bluegill Sunfish, 96 hr LC ₅₀	0.3 mg/L
Daphnia magna, 48 hr EC ₅₀	0.093 mg/L

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL: Pesticide wastes are acutely hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal law. If these wastes cannot be disposed of by use according to label instructions, contact your nearest State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance. Open dumping is prohibited.

CONTAINER DISPOSAL: Triple rinse (or equivalent). Then offer for recycling or reconditioning, or puncture and dispose in a sanitary landfill, or by other procedures approved by state and local authorities. Contact your nearest State Pesticide or Environmental Control Agency, or the Hazardous Waste representative at the nearest EPA regional office for guidance. Open dumping is prohibited.

14. TRANSPORTATION INFORMATION

DOT CLASS:	6.1
UN NUMBER:	3018
IMDG CLASS (sea):	6.1
IATA CLASS (air):	6.1
MARINE POLLUTANT:	Yes
PACKING GROUP:	II
HAZARD LABEL(s):	TOXIC
ADR CLASS (road):	6.1
PROPER SHIPPING NAME(s):	Organophosphorus pesticide(s), liquid, toxic, (Ethoprophos)
REPORTABLE QUANTITY: (DOT, 172.101, Appendix A)	No

PACKAGING

GENERAL DESCRIPTION: 2.5 gallon bottles (2/cs), 55 gallon drums

15. REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS: This product is registered under EPA/FIFRA Regulations. It is a violation of Federal Law to use this product in any manner inconsistent with its labeling. Read and follow all label directions. This product is excluded from listing requirements under EPA/TSCA.

SARA TITLE III DATA

Section 311 & 312 Hazard Categories:

Immediate Health Hazard:	Yes
Delayed Health Hazard:	Yes
Fire Hazard:	Yes
Reactive Hazard:	No
Sudden Pressure Release Hazard:	No

Section 302 Extremely Hazardous Substances:

Ethoprop (CAS No. 13194-48-4)

Section 313 Toxic Chemicals:

Ethoprop (CAS No. 13194-48-4)
Naphthalene (CAS No. 91-20-3)

CERCLA Reportable Quantity (RQ):

Naphthalene (CAS No. 91-20-3) 100 lbs

EPCRA Threshold Planning Quantity (TPQ):

Ethoprop (CAS No. 13194-48-4) 1000 lbs

STATE REGULATIONS:

CALIFORNIA (Proposition 65): This product contains a chemical known to the state of California to cause cancer:

Ethoprop (CAS No. 13194-48-4)
Naphthalene (CAS No. 91-20-3)

16. OTHER INFORMATION

MSDS STATUS:

Date This Revision: 4 August, 2011

Date Previous Revision: New MSDS

Person Responsible for Preparation: Gary A. Braden

REASONS FOR REVISION: New Product for Amvac Chemical Corporation.

DISCLAIMER: This information is provided for the limited guidance to the user. While Amvac believes that the information is, as of the date hereof, reliable, it is the user's responsibility to determine the suitability of the information for its purposes. The user is advised not to construe the information as absolutely complete since additional information may be necessary or desirable when particular, exceptional, or variable conditions or circumstances exist (like combinations with other materials), or because of applicable regulations. No express or implied warranty of merchantability or fitness for a particular purpose or otherwise is made hereunder with respect to the information or the product to which the information relates.

16. OTHER INFORMATION, cont'd

ABBREVIATIONS:

ACGIH	-	American Conference of Governmental Industrial Hygienists
A.O. I.	-	Atelosteogenesis, Type I
CERCLA	-	Comprehensive Environmental Response, Compensation, and Liability Act
EPA	-	Environmental Protection Agency
FIFRA	-	Federal Insecticide, Fungicide, and Rodenticide Act
IARC	-	International Agency for Research on Cancer
NOEC	-	No Observed Effect Concentration
NTP	-	National Toxicology Program
OSHA	-	Occupational Safety and Health Administration
P. II	-	Phase II clinical studies
SARA	-	Superfund Amendments and Reauthorization Act
TSCA	-	Toxic Substances Control Act

This is the last page of this MSDS. There should be 9 pages.